REVEGETATING WITH TREES AND SHRUBS ON DEGRADED LAND

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Abstract. Actively planning revegetation to reduce long-term noxious weed maintenance costs is a new approach. The alternatives, seedling planting, natural regeneration and direct seeding, have been widely employed in degraded areas. Active planning of revegetation requires an assessment of both the capacity of the species chosen to successfully compete with the particular weed problem and testing of the most cost-effective revegetation techniques. Appropriate research is needed to minimize major set-backs.

An understanding of the site is required to choose techniques. Soil-type, rainfall, slope, aspect, ant activity, initial weed competition and seed availability and viability need to be considered. Research in South Australia has shown that removal of herbivores and weed competition are the two most critical factors in successful revegetation. Residual herbicides such as oxyfluorfen, oryzalin and simazine have been effective for weed control, however disturbance of the weed spectrum during the establishment phase is often a consequence. Hence, the benefits of this weed management strategy are not realised until the vegetation fully occupies the site.

THE USE OF FIRE TO CONTROL *MIMOSA PIGRA*

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Abstract. Mimosa, *Mimosa pigra,* is a major threat to primary industry and conservation in the wetlands of northern Australia. Although fire is prevalent in the region, its use on mimosa thickets is limited because of their low flammability. An infestation of dead mimosa was ignited in the late dry season using a "helitorch" flying in two different patterns. Prior to burning half of the area was flattened with a bulldozer to increase the fuel density, and the rest was left standing.

With ignition in a spiral pattern, the fire burned equally well within the standing canopy and in the flattened area. Ignition as a line fire gave lower temperatures than the spiral pattern, and little evidence of damage to the standing mimosa stems. For this reason the highest temperatures occurred in the flattened mimosa.

Fire temperatures were negatively correlated with distance from the soil surface. Effects on seed germination, viability and mortality depended on exposure temperature. Seed death is an advantage for management of the weed, but because heat also stimulates germination of the vast soil seed bank, follow-up control is imperative.